

STUDIES OF WEEVILS (RHYNCHOPHORA) WITH DESCRIPTIONS OF NEW GENERA AND SPECIES.

By W. DWIGHT PIERCE.

Of the Bureau of Entomology, United States Department of Agriculture.

The group Rhynchophora was originally defined for those Coleoptera with tetramerous tarsi which are provided with a beak, and has for a long time ranked as a suborder of Coleoptera. Recent studies, however, tend to subordinate the Rhynchophora as a part of a series, the other part being the group known as the Phytophaga. This arrangement is far more satisfactory because of the evident transitions from one group to the other.

It is impossible to make a linear arrangement of the superfamilies in this series because of several varying characters—namely, the tarsi, the maxillary palpi, the submentum, the antennae, the labrum, and the beak.

The tarsi are five-jointed, with the fourth joint minute and anchylose with the fifth, and with the third bilobed in Cerambycoidea, Chrysomeloidea, Mylabroidea, and Scolytoidea. They are four-jointed, with the third minute and anchylosed with the fourth and with the second bilobed in Aglycyderoidea. Finally, they are four-jointed with the third bilobed in Brentoidea, Platystomoidea, Doydirhynchoidea, Attelaboidea, Brachyceroidea, and Curculionoidea.

The maxillary palpi are normal and flexible in the Cerambycoidea, Chrysomeloidea, Mylabroidea, Brentoidea, Platystomoidea, and Doydirhynchoidea, and rigid, nonflexible in Scolytoidea, Aglycyderoidea, Attelaboidea, Brachyceroidea, and Curculionoidea.

The labrum is distinct in Cerambycoidea, Chrysomeloidea, Mylabroidea, Platypodidae of Scolytoidea, Platystomoidea, and Doydirhynchoidea; and absent or indistinct in Scolytidae, Aglycyderoidea, Brentoidea, Attelaboidea, Brachyceroidea, and Curculionoidea.

The submentum is not pedunculate in Cerambycoidea, Chrysomeloidea, Brentoidea, Platystomoidea, and Brachyceroidea, and is pedunculate in Mylabroidea and Attelaboidea.

The antennae are simple, nongeniculate, nonclavate in Cerambycoidea, Chrysomeloidea, Mylabroidea, Aglycyderoidea, and part of the

Brentoidea; nongeniculate but clavate in Platystomoidea, Doydirhynchoidea, Attelaboidea, and Brachyceroidea; geniculate, nonclavate in part of the Brentoidea; geniculate and clavate in Scolytoidea and Curculionoidea.

In these characters it will be noted that the superfamily having the greatest number of specialized general characters is the Curculionoidea. On the other hand, it will be noted that the Scolytoidea are intermediate between the beakless Cerambycoidea, Chrysomeloidea, and Mylabroidea, and the beaked Rhynchophora.

Even in the larvae we find a progression of characters. The Cerambycoidea and Chrysomeloidea with a few exceptions have the larvae provided with legs. The Mylabroid larvae are provided with legs only in the first stage. Legs are also found in the larvae of the Platystomoidea. The other groups have legless larvae, although there are occasionally found tubercles or rings where the legs should be.

The writer has followed the prevailing tendency in considering the groups known to LeConte and Horn as families to be worthy of superfamily rank. The following table is proposed as a guide for the arrangement of superfamilies in the series Phytophaga. This series in the classification of Kolbe belongs in the Order Coleoptera, Suborder Heterophaga, Legion Symphyogastra, Phalanx Synactostemata, Superseries Anchistopoda.

TABLE OF SUPERFAMILIES IN THE PHYTOPHAGA.

1. Tarsi five-jointed, the fourth joint minute and anchylosed with the fifth, third usually bilobed, head not prolonged into a distinct beak. Subseries Phytophaga 2.
Tarsi four-jointed; head prolonged into a distinct beak. Subseries Rhynchophora 5.
2. Maxillary palpi flexible, labrum distinct.....3.
Maxillary palpi rigid, labrum sometimes lacking, submentum not pedunculate;
front very slightly prolonged into a broad beak; antennae geniculate, clavate.
SCOLYTOIDEA Hopkins.
3. Submentum not pedunculate; head not prolonged into a beak.....4.
Submentum pedunculate; front prolonged into a broad, quadrate beak; antennae
inserted in front of the eyes, variable in length, serrate or pectinate; tibial spurs
distinct or obsolete.....MYLABROIDEA, new superfamily.
4. Antennae usually long or greatly developed, frequently inserted upon frontal
prominences; front often vertical, large and quadrate; tibial spurs distinct.
CERAMBYCOIDEA, new superfamily.
Antennae moderate or short, not inserted upon frontal prominences; front small,
oblique, sometimes inflexed; tibial spurs usually wanting.
CHRYSOMELOIDEA, new superfamily.
5. Third tarsal joint minute, anchylosed with the fourth, second usually bilobed;
head prolonged into a beak in at least one sex; antennae nongeniculate, non-
clavate; maxillary palpi rigid; labrum absent.
AGLYCYDEROIDEA, new superfamily.
Third tarsal joint not minute, usually bilobed, head prolonged into beak in both
sexes.....6.
6. Antennae nonclavate, geniculate or nongeniculate; labrum absent; maxillary palpi
flexible; submentum nonpedunculate...BRENTOIDEA, new superfamily.
Antennae clavate.....7.

7. Antennae straight, or very feebly geniculate (Orthoceri).....8.
 Antennae geniculate; maxillary palpi abnormal rigid, conical, the joints diminishing successively; labrum absent; beak well developed, variable in form.
 CURCULIONOIDEA, Hopkins.
8. Maxillary palpi normal, flexible; labrum distinct.....9.
 Maxillary palpi rigid, conical, the joints diminishing successively; labrum never distinct.....10.
9. Anterior coxae globose; pygidium more or less exposed; submentum not pedunculate.....PLATYSTOMOIDEA, new superfamily.
 Anterior coxae conical; pygidium not exposed.
 DOYDIRHYNCHOIDEA, new superfamily.
10. Submentum pedunculate; mentum often very small; maxillae free.
 ATTELABOIDEA, new superfamily.
 Submentum without a peduncle, or any vestige of one; mentum covering the maxillae, except sometimes at their base; beak more or less robust, never slender and filiform; scrobes attaining, or almost so, the commissure of the mouth.
 BRACHYCEROIDEA, new superfamily.

The superfamily Mylabroidea is the old family Bruchidae. The genera in this group have become greatly confused. The name *Bruchus* was first used by Geoffroy in 1762 for two species, only one of which was definitely associated by the quotation given with a name. This was *Cerambyx fur* Linnaeus which becomes type of *Bruchus* and causes that genus to replace *Ptinus* Linnaeus. *Bruchus* Linnaeus was not described until 1767, being based on (*pisi* Linnaeus) *pisorum* Linnaeus. Besides being preoccupied it was an isogenotype of *Mylabris* Geoffroy 1762, which was based on three species, the first identified being No. 1, *pisorum* Linnaeus, and of *Laria* Scopoli 1763, of which Bedel in 1901 designated the type as (*salicis* Scopoli) *pisorum* Linnaeus.

The superfamily Aglycyderoidea includes the families Aglycyderidae and Proterhinidae.

The superfamily Brentoidea, based on the genus *Brentus* Fabricius, is the old family Brenthidae.

The superfamily Platystomoidea is the old family Anthribidae. It is to be divided into the families Bruchelidae (Urodonidae), Platystomidae and Choragidae. The generic name *Anthribus* fares as badly as *Bruchus*. The name *Anthribus* was first used by Geoffroy in 1762 for four species, of which only one was at the time identifiable by the quotations given. This was *Dermestes pulicarius* Linnaeus now placed in the Nitidulidae. Müller in 1764 gave *Anthribus* the same meaning; De Geer in 1775 based his genus on a species *ruber*; Müller in 1776 based his genus on a species *glaber*; Clairville's 1798 conception was based on *ruficollis*, a Salpingid; Fabricius in 1790 gave the name the sense which has since been followed. As the name was many times excluded from the Rhynchophora the choice for the typical genus fell to the next oldest valid name in the superfamily, which was *Platystomos* Schneider (1791), of which Bedel (1881) designated the type as *albinus* Linnaeus.

The superfamily Doydirhynchoidea is the old family Rhinomaceridae. The genus name *Rhinomacer* was first used by Geoffroy in 1762 for 11 species, only one of which was definitely associated by quotations with a named species. This was *Attelabus coryli* Linnaeus, which has been designated by Bedel (1885) as type of *Attelabus* Linnaeus (1758). The Fabrician (1787) genus *Rhinomacer* is based on *attelaboides* Fabricius and is a synonym of *Cimberis* Des Gozis. The oldest generic name available is therefore *Doydirhynchus* Dejean (1821) based on *austriacus* Olivier. This generic name has been frequently emended.

The superfamily Attelaboidea has as its type-genus *Attelabus* Linnaeus (1758) and contains the following families: Apionidae (Belidae), Attelabidae, Tachygonidae, Pterocolidae, and Oxyrhynchidae.

The superfamily Brachyceroidea has its type-genus *Brachycerus* Olivier and contains the families Brachyceridae and Microceridae.

The superfamily Curculionidea is the old family Curculionidae, based on *Curculio* Linnaeus (*Balaninus* Germar) of which the type was designated by Latreille (1810) as *nucum* Linnaeus. It contains the families Psallidiidae (Brachyrhinidae), Psaliduridae, Plinthidae, Hyperidae, Curculionidae, Orobitidae, Cryptorhynchidae, Rynchophoridae (Calandridae), and Cossonidae.

The superfamily Scolytoidea (Ipoidea Swaine) is the old family Scolytidae, and is based on *Scolytus* Geoffroy 1762.

More complete discussions of these various families will be presented from time to time.

PSALLIDIIDAE, new family (OTIORHYNCHIDAE, BRACHYRHINIDAE).

Subfamily PSALLIDIINAE (Brachyderini).

TRIBE THYLACITINI.

EXOPHTHALMODES, new genus.

Exophthalmus (Schönherr) CHAMPION (part), Biol. Centr. Amer. Coleopt., vol. 4, 1911, pt. 3, pp. 249-270 (not *Exophthalmus* Latreille).

Champion has included in his genus Schönherr's type *quadrivittatus* Olivier, *nicaraguensis* Bovie and *scalaris* Boheman, all of which undoubtedly belong to *Diaprepes* Schönherr, because of the presence of vibrissae on the lateral anterior margin of the prothorax.

Thirteen specimens of *quadrivittatus*, five of *nicaraguensis* determined by Champion, and 15 of *scalaris* have been personally examined.

Other than these and possibly a few other species, Champion had a distinct Thylacitine (Brachyderine) genus before him. Specimens determined by him are at hand in the following species: *verecundus* Chevrolat, *cupreipes* Champion, *carinirostris* Boheman, *vitticollis*

Champion, *opulentus* Boheman, *carneipes* Champion, *agrestis* Boheman, *distigma* Champion, *scalptus* Champion, *impositus* Pascoe, *triangulifer* Champion, *duplicatus* Champion, *coeruleovittatus* Champion, *lunaris* Champion, *Jekelianus* White, and *sulcicrus* Champion.

From these I have selected *opulentus* Boheman as type. Schönherr's (1826) generic name *Exophthalmus* is preoccupied by Latreille (1825).

Family CURCULIONIDAE.

RHININAE, new subfamily (Magdalini).

This subfamily is based on the genus *Rhina* Latreille,¹ 1802. *Rhina* was based on two species *barbicornis* Fabricius and *cerasi* Fabricius, the latter being questioned. Crotch is 1870 designated *barbicornis* as type. Latreille's 1807² use of *Rhina* is entirely different and is based on *barbirostris* Fabricius. In 1810 Latreille cited *barbirostris* as type of *Rhinus*. This species belongs to the Cossonidae. To differentiate the two subfamilies we will call the curculionid group, Rhininae, based on *Rhina*, and the Cossonid group Orthognathinae based on *Orthognathus* Schönherr, the next oldest genus.

The genus *Magdalis* Germar, 1817,³ has for its type (*aterrima* Linnaeus) *armigera* Geoffroy. The name *Rhinodes* Dejean (1821) is a synonym of *Magdalis*. The genus *Edo* Germar (1819) is based on (*pruni* Linnaeus) *ruficornis* Linnaeus. The preoccupied genus *Thamnophilus* Schönherr has for its type *violaceus* Fabricius, and *Panus* Schönherr is based on a synonym of *barbicornis* Latreille. Rafinesque (1815) proposed *Rhinostomus* as a substitute for *Rhina*.

All of these names are at present considered as belonging to one genus with four subgenera, which may ultimately be separated. As the genus now stands in the European check list the genus should be *Rhina* Latreille with subgenus 1, *Magdalis* Germar (*Thamnophilus* Schönherr, *Rhinodes* Dejean); subgenus 2, *Rhina* Latreille (*Rhinostomus* Rafinesque, *Panus* Schönherr); subgenus 3, *Edo* Germar; and subgenus 4, *Panopsis* Daniel.

The North American species have not been arranged in accordance with the subgeneric groupings.

CARCILIINAE, new subfamily.

This subfamily differs from the Læmosaccinae by having the front coxae partly contiguous and from the Rhininae (Magdalidinae) by having the first two abdominal segments partly concave and by having the pygidium covered, while the claws are single.

¹ Hist. Nat. Gén. et Part. des Crust. et Ins., vol. 3, 1802, pp. 198-199.

² Gen. Crust. et Insect., vol. 2, 1807, pp. 268, 269.

³ Mag. der Ent., vol. 2, 1817, p. 339.

Genus *CARCILIA* Roelofs, 1874.

Carcilia ROELOFS, Ann. Soc. Ent. Belg., vol. 17, 1874, pt. 2, pp. 152-155. Type *strigicollis* Roelofs, monotypic.

Trichomagdalis FALL, Trans. Amer. Ent. Soc., vol. 39, 1913, No. 1, pp. 37-38. Type, *fasciatus* Fall, by original designation.

The following is a translation of the original description, which was published in French:

Head large, suglobular, declivous in front. Beak drooping, as long as head, robust, a little enlarged toward the tip; scrobes anterior in the male, or behind the middle in the female, arcuate, strongly oblique and attaining the base. Antennae rather long, robust, especially in the male, not strongly elbowed; scape short, capitate; funicle seven-jointed, first two joints elongate, subequal, obconical, the third, fourth, and fifth subtrubinate, and the last joints shorter and transverse; club elongate, oval, apically acuminate, four-jointed, pubescent. Eyes very large, transverse, oval, shortly approximate above.

Prothorax as long as wide, convex, feebly bisinuate at base, with posterior angles rectangular, without ocular lobes, strongly and angularly emarginate beneath.

Scutellum moderate, triangularly rounded. Elytra elongate, hardly wider than the prothorax; covering the pygidium.

Legs short, very robust, compressed. Femora dentate. Tibiae strongly unguiculate at apex, unguis in form of a straightened claw. The three first joints of the tarsi very large; the claws of the fourth divaricate, dentate beneath. Mesosternal process narrow. Second segment of the abdomen as long as the two following together, separated from the first by a suture almost effaced at the middle and curved at this place. The abdomen is narrow, angular.

The typical species of the genus are Japanese.

TABLE OF SUBGENERA OF *CARCILIA*.

- | | |
|-------------------------------|-----------------------------|
| 1. Claws toothed beneath..... | <i>Carcilia</i> Roelofs. |
| 2. Claws single..... | <i>Trichomagdalis</i> Fall. |

TABLE OF THE NORTH AMERICAN SPECIES OF *TRICHOMAGDALIS*.

- | | |
|---|------------------------|
| 1. Vestiture quite uniform..... | 2 |
| Vestiture more condensed with semiglabrous areas unicolorous fawn-colored | <i>conspersa</i> Fall. |
| 2. Vestiture mottled reddish and grayish above almost uniform grayish beneath for anterior portions but reddish on abdomen..... | <i>fasciata</i> Fall. |
| Vestiture uniformly whitish..... | <i>atrata</i> Fall. |

CARCILIA (TRICHOMAGDALIS) FASCIATA Fall.

Trichomagdalis fasciatus FALL, Trans. Amer. Ent. Soc., vol. 39, 1913, pp. 37, 38.

A male specimen is at hand collected by H. S. Barber, on Redwood Creek, Blair's ranch, Humboldt County, California, June 13.

This specimen has tiny denticles beneath about the middle of the femora, thus answering Roelofs' diagnosis of the genus. It measures slightly over 5 mm. in length. The first abdominal suture is indistinct and curved forward at the middle. This character is also brought out by Roelofs.

CARCILIA (TRICHOMAGDALIS) CONSPERSA Fall.

Trichomagdalís conspersus FALL, Trans. Amer. Ent. Soc., vol. 39, 1913, p. 38.

The name is spelled *conspersus* at the bottom of the page, thus proving the original use to be a typographical error.

A specimen is at hand from Los Gatos, California, in the Hubbard and Schwarz collection. There is no indication of denticles on the femora. The first abdominal suture is as in the preceding species.

CARCILIA (TRICHOMAGDALIS) ATRATA Fall.

Trichomagdalís atratus FALL, Trans. Amer. Ent. Soc., vol. 39, 1913, p. 38.

No specimen of this species has come to hand.

ORCHESTINAE, new subfamily.

TABLE OF TRIBES.

- | | |
|---|---------------------|
| 1. Front legs normal, non saltatory..... | 2 |
| Front legs saltatory..... | <i>Orchestini</i> |
| 2. Prothorax with more or less developed ocular lobes | <i>Loncophorini</i> |
| Prothorax without ocular lobes | <i>Anthonomini</i> |

LONCOPHORINI, new tribe.

Ceratopides LACORDAIRE, Gen. Coleop., vol. 6, 1863, p. 589.

In Lacordaire's tables the specimens of *Loncophorus* before the writer would readily fall in the group *Ceratopides*, and as *Loncophorus* is the oldest genus the tribe will take its name from it.

The tribe is separated from Anthonomini by the presence of more or less well-defined ocular lobes on the prothorax. Champion has associated the genera *Chelotonyx*, *Ceratopus*, and *Acanthobrachium* with the Eirrhiniinae because of these lobes, but it seems better to arrange them in the Orchestinae with *Loncophorus*.

If the genus *Loncophorus* were admitted in the true Anthonomini it would be associated in the tables with *Chelonychus*, from which it is readily separated by its long beak, its long front legs, its slight ocular lobes, and the long slender antennae.

Genus LONCOPHORUS Chevrolat.

Loncophorus CHEVROLAT, Ann. Soc. Ent. France, vol. 1, 1832, pp. 215-217. (Not *Lonchophorus* Germar 1824 in Lamellicornes)

Lonchophorus GEMMINGER and HAROLD, Cat. Coleop., vol. 8, 1871, p. 2498.

This genus was founded on two species, *obliquus* Chevrolat and *parasita* Fabricius, of which *obliquus* is hereby designated as type. Schönherr in 1836,¹ designated as type, *chevrolati* Gyllenhal, which was not originally included and can not therefore serve as type.

The genus contains a number of species from the West Indies, Central and South America, of which the four following are char-

¹ Gen. et sp. Cure., vol. 3, 1836, p. 392.

acterized by a large spindle-shaped white marking on the elytra. It is quite possible that some synonymy may develop among the first three mentioned below.

LONCOPHORUS OBLIQUUS Chevrolat.

Loncophorus obliquus CHEVROLAT, Ann. Soc. Ent. France, vol. 1, 1832, p. 218, pl. 5, fig. 1.

Lonchophorus obliquus CHAMPION, Biol. Centr.-Amer., Coleop., vol. 4, pt. 4, 1903, p. 152.

This species was originally described from Rio Janeiro, Brazil, and is recorded by Champion from Nicaragua.

Recently three handsome live female specimens were received by Representative Rufus Hardy, of Texas, from Panama on fruit of *Ceiba ceiba* and transmitted to the writer under date of June 19, 1913. These specimens agree quite well with Chevrolat's figure and description, but almost as well with Olivier's figure and description of the Cuban *stigma* and Germar's description of *petiminosus*.

LONCOPHORUS DAVIESII Swederus.

Curculio davesii SWEDERUS, Acta Holmiae, vol. 3, 1787, p. 194, pl. 8, fig. 5.

Rhynchænus stigma OLIVIER (not *Curculio stigma* Linnaeus 1767), Entomologie, vol. 5, 1807, p. 194, pl. 8, fig. 87.

Loncophorus petiminosus GERMAR, Schönherr's Gen. et Sp. Curc., vol. 3, 1836, p. 395.

Lonchophorus petiminosus GUNDLACH, Contr. Ent. Cubana, vol. 3, 1891, p. 290.

There still remains a little doubt concerning the synonym which is given by Germar. Gundlach records this species as breeding in the seeds of silk cotton (*Ceiba ceiba*) in Cuba. The description given by Swederus answers perfectly for a *Loncophorus*, but the locality is given as New York.

LONCOPHORUS HUMERALIS Chevrolat.

Loncophorus humeralis CHEVROLAT, Ann. Soc. Ent. France, vol. 1, 1832, p. 442.

This is also a Cuban species and probably identical with the preceding.

LONCOPHORUS NITIDUS Champion.

Several live adults were bred from fruit of *Bunchosia macrophylla* Rose? sent by C. Werkle from San Jose, Costa Rica, in quarantine at Washington, District of Columbia, October 22, 1914, by H. L. Sanford. This species occurs in Mexico, Guatemala, Panama, and Colombia.

LONCOPHORUS CHEVROLATI Gyllenhal.

A single crushed specimen of this species is at hand from San Bernardino, Paraguay, collected by K. Fiebrig from fruit of *Chorisia speciosa*, September 2. This species is distinguished especially by the multistriate beak, the castaneous color, and the relatively shorter beak, which is not as long as the body in the female.

LONCOPHORUS, species.

Other species in the genus are *parasita* Fabricius from Cayenne, *fortis* Champion of Panama, *fusiformis* Champion of Mexico, Guatemala, and Panama, *pustulatus* Champion of Panama, and *verruciger* Champion of Costa Rica.

OROBITIDAE, new family.

OROBITINAE, new subfamily (Cryptorhynchinae).

Tribe TYLODINI.

Genus LEIOMERUS (Chevrolat) Boheman.

Leiomerus (Chevrolat MS.) BOHEMAN, Schönherr's Gen. at Sp. Curc., vol. 8, 1844, pt. 1, p. 266. Based on *Coelosternus* (*Leiomerus*) *glabrirostris* (Chevrolat) Boheman.

Coelosternus SCHÖNHERR, Curc. Disp. Meth., 1826, p. 284 (not *Coelosternus* Sahlberg, 1823) type, *compernis* Germar.

The original usage of *Coelosternus* by Sahlberg makes *balteatus* Sahlberg the type of that genus, and it therefore replaces the erroneous use of *Cryptorhynchus* as found in Gemminger and Harold and other authors. The type of *Cryptorhynchus* Illiger was designated by Latreille in 1810 as *pericarpus* Linnaeus, which is also type of *Rhinoncus*. In view of the fact that Schönherr's *Coelosternus* is left without a name, it is necessary to search for some other available name. The only name thus found is the manuscript name *Leiomerus*, established in the synonymy of *Coelosternus glabrirostris* by Boheman, and henceforth quoted as a generic synonym of *Coelosternus* Schönherr. This name is therefore definitely chosen to represent the genus as redefined by Lacordaire (1866)¹ with *glabrirostris* Boheman as type. It is principally characterized by the single-jointed cylindrical club of the antennae.

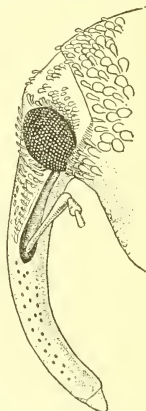


FIG. 1.—SIDE VIEW OF HEAD OF LEIOMERUS GRANICOLLIS.

LEIOMERUS GRANICOLLIS, new species.

Described from four specimens found alive in cassava (*Manihot*) stems from Brazil by H. L. Sanford at quarantine, Washington, District of Columbia, September 10, 1914.

Length, 5.5 to 7 mm.; width, 2.5 to 3.5 mm. Black, covered with tessellated pubescence, subovate. Head convex, very deeply, and closely rugoso-punctate, the rugosity forming a sort of arcuate ridge above the eyes; punctures squamigerous; front narrow, deeply

¹ Gen. Col., vol. 7, 1866, p. 123.

punctate, bristling squamigerous. Eyes, black, finely granulate; separated by less than half the breadth of the beak at base. Beak in male as long as head and prothorax, lightly arcuate, piceous black; rugoso-punctate, finely squamose and medianly carinate to middle; from middle to apex shining and finely punctulate; antennae inserted just behind the middle; scrobes diagonal, reaching to eyes. Female beak more slender, as long as head and thorax on median line, almost impunctate from insertion of antennae to apex; antennae inserted a

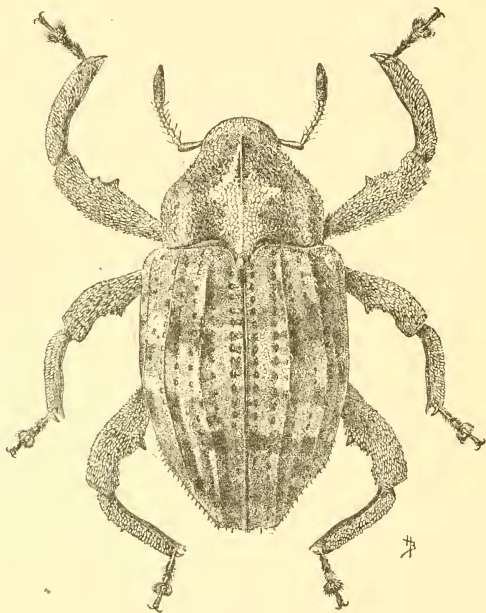


FIG. 2.—ADULT *LEIOMERUS GRANICOLLIS*.

little nearer the base than in the male. Antennae with scape slender clavate; funicle seven-jointed, sparsely pubescent, the first three joints longer than wide, the last four moniliform; club, one-jointed, elongate, cylindrical, a little longer than the last five funicular joints, very finely griseo-pubescent. Prothorax transverse, five-sevenths as long as wide, bisinuate at base, convexly produced at apex, roundly enlarged at sides to middle, thence strongly narrowed, and emarginate near apex, apex subtubulate, lateral margin rough, granulate at least in male; ocular lobes strong, with short vibrissae; surface coarsely granulato-punctate, medianly strongly carinate, closely clothed with broad, striate brownish scales, and more sparsely with

clavate squamiform setae. The scales and setae vary from pale fawn to dark brown and are arranged in longitudinal indistinct fasciae. The median fascia in the basal half is very light cream or fawn color and apically a light brown. On each side of this are very dark fasciae, which shade to lighter on the sides. Elytra wider than prothorax at base, with rounded humeri, sides somewhat sinuate, subparallel at base, gradually approximate behind, more suddenly so at apical declivity; base bisinuate, apex truncate; strial punctures deep, moderately distant, setigerous; interspaces 3, 5, 7, and 9 elevated, carinate, the carina of the third emarginate near base, other interspaces flat or slightly convex, somewhat granulate, especially the first; densely covered with oval, flattened, striate scales, which are smaller than those of the prothorax, varying in color from white to black and arranged in tessellations, the predominant color being fawn; on each interspace there is also a series of distant clavate, squamiform suberect setae. The strial setae are finer and hair like in the sutural and lateral striae and elongate squamiform in the intermediate striae. Scutellum black, oval, convex, coarsely punctate. Undersides black, coarsely punctate, densely squamose, with round and elongate clavate, pinkish striate scales. Rostral canal reaching to middle of mesocoxae. Mesosternum behind, almost even with the posterior margin of the coxae. Metasternum medianly grooved. Intercoxal process of abdomen broad. First abdominal segment behind coxae subequal to each of the following three segments; fifth segment transverse subtruncate in male and depressed semilunar in female. Legs densely punctate, squamose, sparsely setose; moderately stout; femora clavate, sinuate, bidentate, the outer tooth being minute; tibiae arcuate, carinate beneath, strongly unguiculate; tarsi densely pulvillate beneath, the third joint broadly bilobed; claws simple, divaricate.

The females at hand are all smaller than the males and all present different variations in the color pattern. On fresh specimens the scales present a distinct pinkish tint. Some have much more white than others. Two black spots at the basal third are especially marked in these specimens.

Type.—Cat. No. 19035, U.S.N.M.

This species belongs to the group with *scrobicollis*, *pullatus*, *atropos*, *sulcatulus*, *cinereus*, *tesselatus*, *carinatus*, and *guadelupensis*, all of which have bidentate femora, and alternately elevated intervals on the elytra, but it differs by the granulations of the thoracic and elytral surfaces, the color of the vestiture, and various other characters from all of them.

Leiomerus alternans Boheman (*Coelosternus*) is recorded on *Manihot manihot* (*Jatropha*) in Guadeloupe.

CRYPTORHYNCHIDAE, new family.

EURHININAE, new subfamily (Barini).

Genus EISONYX LeConte.

Eisonyx LeConte, Trans. Amer. Ent. Soc., vol. 8, 1880, p. 216. Type, *crassipes* LeConte.

Eumononycha Casey, Ann. N. Y. Acad. Sci., vol. 7, 1893, p. 601. Type, *opaca* Casey.

The species of this genus are exceedingly rare. The writer has before him ten specimens, representing three distinct species. Owing to the apparent transition furnished by one of these species between the typical *Eisonyx* and the typical *Eumononycha* it seems better to unite these as subgenera under *Eisonyx*, the genus being characterized by the single claw, and the connate first and second abdominal segments.

TABLE OF SUBGENERA OF EISONYX.

1. Elytral striae all but completely obsolete, indicated by foveae at base and very faint depressions.....*Eisonyx* LeConte.
2. Elytral striae complete.....*Eumononycha* Casey.

Subgenus EISONYX LeConte.

Only two specimens of *Eisonyx crassipes* LeConte from Texas have heretofore represented this species, and were to be found in the LeConte and Horn collections. Two other specimens were taken by the writer May 25, 1906, on *Physalis cornuta* at Dallas, Texas, on a railway embankment of the Santa Fe Railway in East Dallas at a point near where Mount Auburn car line crosses this railway. Every year since then repeated searches have been made in every conceivable place in this neighborhood without yielding another individual.

A character not mentioned in the previous descriptions of this species and which may possibly differentiate the Dallas specimens is a large broad median depression on the first and second abdominal segments, and the complete fusion of these segments in the middle.

Subgenus EUMONONYCHA Casey.

TABLE OF SPECIES OF EUMONONYCHA.

1. Body rhomboidal, shaped as in *Eisonyx*, but legs more slender; elytral striae strong at base, becoming very faint but distinct behind, elytral punctuation minute and sparse, body somewhat shining.....*picipes*, new species.
2. Body oval; legs moderately slender; elytral striae strong throughout; elytral punctuation dense, but very shallow, body opaque.....*opaca* Casey.

EISONYX (EUMONONYCHA) PICIPES, new species.

Described from one specimen collected at Nashville, Tennessee, in September in a strawberry field.

Size 3.75 mm. Rhomboidal, widest between basal third and fourth of the elytra, black, moderately shining and smooth throughout, convex. Vestiture consisting of a patch of about three linear squamules at the bases of the third and seventh elytral intervals, a few scattered squamules on the commissure between the prothorax and elytra, a very few on the sides of the prothorax, a few finer hair-like scales on the base of the beak, and at the sides of the fourth abdominal segments, and on the venter of the thorax and a very fine sparse pubescence on the legs; tarsi densely pubescent beneath. Head finely but sparsely punctate; the beak densely, and deeply, finely punctate, separated from the head by a transverse sharply defined groove, bead beneath with a deep groove from tip terminating between the grooves of the scrobes, which give the appearance of the beak being bent at the point they pass underneath. Antennal funicle seven-jointed, first joint somewhat elongate, others compact, moniliform; club ovate, compact. Prothorax deeply and strongly irregularly punctate, with median and discal smooth areas; as long as wide, convex; apex only one-half as wide as base, sides convex; base almost regularly convex, median lobe nearly obsolete. Elytra at base not wider than prothorax, but at widest point about one-half wider, and fully twice as long; sides convex, most strongly so at basal third, strongly convergent to apex, sutural notch obsolete; striae strong at base but gradually becoming very faint; punctuation extremely fine. Undersides finely and sparsely punctate, more strongly so at tip of last abdominal segment, first and second segments connate, the suture showing only at the sides. Legs reddish piceous, much more slender than in *crassipes*, but the tibiae slightly curved back near apex; tibiae unguiculate; tarsi with only a single claw.

One other specimen is at hand, collected also at Nashville, Tennessee, August 4-15, 1897, by Prof. H. F. Wickham. It measures just 2-5 mm. but it differs in no important structural characteristics from the type. Since the above was written Mr. G. G. Ainslie has collected several specimens at Nashville at roots of an aster.

Type.—Cat. No. 18823, U.S.N.M.

EISONYX (EUMONONYCHA) OPACA Casey.

There are at hand five specimens of this species collected in the stomach of a bird (*Oxyechus* ?sp.) at Mount Belview, Texas, December 2, 1898. (Biological Survey stomach 29859.)

One specimen, somewhat smaller than any of the above series, and with the legs lighter reddish, and the punctuation finer, was bred June 15, 1908 from roots of *Senecio lobatus* collected by E. S. Tucker, at Clarksville, Texas, March 30, 1908.